The Maryland Fruit Grower

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CONTROL OF FIELD MICE

By G. C. ODERKIRK

Reprinted from "Wisconsin Horticulture," September, 1939

Watch for Mice—A large part of the injury and loss of shade trees as well as fruit trees could be avoided each year by making periodical inspections of the areas in which the trees are planted to determine the abundance of mice. If they appear numerous it does not require much time or expense to apply control methods. However, it is advisable to plan and follow a yearly program of field mice control and thus avoid losses. So many growers overlook the presence of mice until damage has been done. It would pay to give the mouse problem attention as a regular orchard practice and not depend on applying control methods, particularly poisoned baits, only when the infestation is at a high point. Until this is observed the loss of fruit trees will continue from year to year.

Clear Away Grass—Meadow mice feed largely beneath matted grass or other cover on the surface of the ground. They carefully avoid bare or relatively bare surfaces that offer little or no protective cover. This being true, it would be well to rake or otherwise clear away a space from the vicinity of the shrubs or trees that need protection. The cleared space near a tree need not be over 18 inches in diameter to be of considerable help.

Snow Protects Mice—Late in winter the cleared space near trees may be of no value due to the heavy fall of snow through which mice will burrow to the tree or shrub. During winter the snow serves as protective cover and it frequently happens that trees are girdled to the snow line. Also, leaves may blow into the cleared space and form a natural mulch that gives the necessary cover for mice. Thus, the removal of grass serves to protect a tree from injury largely during the late fall and the early spring months.

Traps—The latter conditions point to the necessity of applying methods other than natural controls. In the small home orchard or grounds planted to ornamental shrubs and shade trees, it is possible to remove mice with traps and thus prevent winter damage. Traps should be used late in October or the fore part of November before cold weather sets in. The common wood snap trap is very effective. The use of a few dozen snap traps set in active runways for a short period of time will greatly reduce the infestation and prevent winter injury in the small home orchard. Traps may be baited by placing pinches of rolled oats on the triggers of the traps. The addition of peanut butter to rolled oats makes a good attractive bait for use in trapping house mice as well as field mice.

Bait Best in Large Orchards—The poisoned bait method of field mice control is preferred in the commercial orchard or other large area requiring protection. The results obtained with poisoned baits will depend upon the

variety of food used as bait and the thoroughness with which the bait is applied. Individual field mice, like other animals, have varying tastes. Thus it is desirable to apply more than one type of food to realize the most from the time and effort expended in the exposure of bait. In recent years the Bureau of Biological Survey has furnished a ready-mixed whole oats bait to fruit growers and others at cost. The fact that this effective bait could be obtained on short notice has greatly reduced the loss of fruit trees where there was an immediate need for poisoned bait to control mice. However, in this connection it is notable that orchardists are prone to rely on one bait either because it is easier to mix a single type or to purchase one that is ready mixed. Thus, a thorough baiting program should include the use of a grain and a vegetable or fruit bait. Sweet potato or carrot, preferably the former, dusted with strychnine is accepted quite readily by meadow mice and should be used as a supplement to a grain bait such as whole oats, or a mixture of common breakfast food rolled oats and wheat.

Where to Put Bait—The placement of poisoned bait has not received the attention in the past that it deserves. Baits must be located where mice will come upon them in the course of their normal activities. If the baits are placed in runways that are well traveled it is likely that mice will find and feed upon them within a short time after exposure. Thus, look for runways that show by the presence of fresh droppings and the absence of green growth, that mice are using the runway. Part the grass, place a teaspoonful of bait or a piece of cut bait, or both, in the runway and replace the grass so that the covering over the runway will be much the same as it was originally. Place bait at two to four different points in runways near a tree. If this is done it is likely that most of the mice, if not all of them, in the area, will be destroyed by the bait.

Paper Tubes for Stations—Poison stations in which bait is placed, largely for protection from weather, may be used with good effect although the placement of bait directly in the mouse runways will produce far better results. If bait stations are desired, they may be made from light weight asphalt paper. The paper should be cut into pieces 9 x 13 inches and these strips are then rolled into tubes about two inches in diameter. The tubes should be baited with a tablespoonful of poisoned grain, placed in runways and lightly covered with grass. One station per tree should suffiice.

Field mice produce their young largely during the warm seasons of the year. This being true it will be helpful to bait the orchard, or at least the heavily infested areas, during the late summer months to prevent the increase in young. However, it is most important to make a thorough coverage of the orchard with bait late in October. At that time it is advisable to go over the orchard with a complete baiting and repeat the application a week later in areas where mice seem most abundant. It is vitally important to give the orchard this attention in the late fall. If the treatment is thorough it should keep mouse injury at a very low point if it does not entirely eliminate it during the cold winter months.

Rolled-oat Bait—Mix together, dry, ⅛ ounce of powdered strychnine and ⅛ ounce of baking soda. Sift the strychnine-soda mixture over 1 quart of rolled oats, stirring constantly to insure an even distribution of the poison through the grain. Thoroughly warm the poisoned rolled oats in an oven and sprinkle over them 6 tablespoons of a mixture of 3 parts of melted

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beef fat and 1 part of melted paraffin, mixing until the oats are evenly coated. When the grain is cool it is ready for use.

If a larger quantity of bait is needed, use in the proportion of 1 ounce of strychnine, 1 ounce of soda, 8 quarts of rolled oats, and 1¼ pints of the beef-fat paraffin mixture. In applying the coating it is very important that the beef-fat paraffin mixture be hot and the poisoned rolled oats thoroughly warm, otherwise it will not be possible to obtain an even coating.

Starch-coated grain bait—Poisoned grain prepared by the following formula is adapted for treating forage-crop or cereal-crop areas where mice are abundant.

Mix 1 tablespoon of gloss starch in ½ teacup of cold water and stir into ¾ pint of boiling water to make a thin clear paste. Mix 1 ounce of powdered strychnine with 1 ounce baking soda and stir into the starch to a smooth creamy mass free of lumps. Stir in ¼ pint of heavy corn sirup and 1 tablespoonful of glycerine. Apply to 12 quarts of wheat.

NOTE—Maryland growers have had excellent results from use of small bundles of fodder laid on the ground in various parts of the orchard, under which poison bait is placed. Mice congregate under these bundles and get the bait. This is done in addition to baiting trees that show evidence of the presence of mice.

FEEDING VALUE OF APPLE POMACE

(Excerpts from "Feeds and Feeding"—by Morrison)

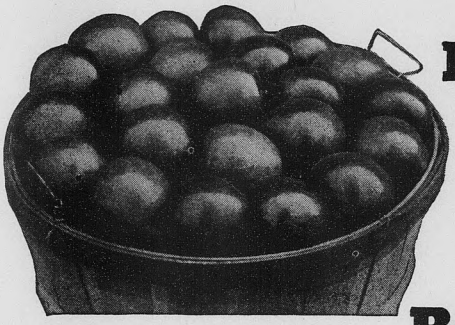
Par. 492—pp. 318—Apples and other fruits. Windfall and surplus apples and other fruit can sometimes be fed advantageously to stock. Apples, peaches, plums, and even pears contain somewhat more dry matter than do such roots as mangels and rutabagas. The chief nutrients are sugars, and fruits are extremely low in protein.

In Vermont tests it was concluded that apples were worth about 40 per cent as much per ton as corn silage for dairy cows. In a Washington test in which 1.5 lbs. per head daily of apples were fed to fattening lambs, along with alfalfa and corn grain, as good results were secured as when the same weight of corn silage was fed in place of the apples. When a larger allowance of apples was fed, the results were less satisfactory. When apples were used to replace part of the grain for pigs in Utah trials, it required 9 to 15 lbs. of apples to equal 1 lb. of grain.

Par. 653—p. 401—Apple pomace; apple pectin pulp. The wet apple pomace which remains when the juice is expressed from apples for cider or for vinegar averages 21 per cent in dry matter, in comparison with 28 per cent for silage from well-matured corn. Apple pomace has only one-third as much digestible protein as such corn silage and is also slightly lower in total digestible nutrients Apple pomace may be fed fresh, it may be ensiled, and it is sometimes dried to make dried apple pomace.

Though apple pomace silage is lower in nutrients than corn silage, it has proved to be a good substitute for corn silage in feeding dairy cows, being approximately equal to corn silage in value per ton. It should be fed after milking, to avoid tainting the milk.

Dried apple pomace may be used in the same manner as dried beet pulp, and it has given very satisfactory results. In experiments where dried apple pomace has been substituted for an equal weight of dried beet pulp



Fall Fertilization of Fruit Trees Recommended

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in a dairy ration, the cows have usually produced slightly less milk and fat. Considering the amount of feed required per 100 lbs. of milk, dried apple pomace has been worth 75 per cent or more of the price of dried beet pulp.

Apple-pectin pulp is the residue left when the pectin is extracted from apple pomace for jelly making. Dried apple-pectin pulp was not as palatable to dairy cows as dried beet pulp in a test by the United States Department of Agriculture, when both were fed after soaking with water. This difficulty can be avoided by mixing the apple-pectin pulp with well-liked concentration.

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GOOD NEWS

The Chilean Nitrate Sales Corporation has issued a statement that the supplies of Natural Chilean Nitrate are ample, and there will be no increase in price of this material during the entire season which ends June 30, 1940.

Fall Fertilizer? Read the Ads.

ANALYZING APPLE SALES

Miscellaneous Report No. 19, August, 1939, entitled "Some Facts Concerning Competition Between Apples and Other Fruits at Retail, New York City," issued by the Farm Credit Administration, Cooperative Research and Service Division, Washington, D. C., contains some excellent and understandable facts and figures regarding the sales of apples and other competing fruits in the New York City area. It is impossible to digest the entire report, but while the supply lasts, it may be obtained by interested fruit growers by writing Director of Information and Extension, Farm Credit Administration, Washington, D. C. However, a few of the statements contained in the report are given here, and both independent and chain store sales are analyzed. Keep in mind that the remarks given are picked at random from the report and parts omitted may give a little different meaning to the remarks given here. The remarks follow:

How Facts Were Obtained—"This preliminary report is based on data obtained from the headquarters records of some of the large chain store systems, and from the managers of 1,790 independent retail outlets in the Boroughs of Brooklyn, Manhattan, the Bronx, and Queens. The 7 chain store systems included in the study operated over 3,300 retail outlets during the period covered, but detailed data were obtained for only a small number of such outlets. Independent vegetable stands; 479 retail groceries; 154 pushcart or wagon hucksters; 22 delicatessens; and 14 meat markets. The distribution of these independent outlets among boroughs was approximately in proportion to the number of families living in each of the boroughs. They were also as nearly as possible in proportion to the important income classes in the city.

Relative Importance of Retail Outlets—Averages of the quantities of important individual fresh fruits, canned fruits, and canned juices sold during the 1937-38 season likewise permit of some limited comparison of sales by each type of retail outlet. On the per outlet basis, fruit and vegetable stores ranked first in sales of apples with almost 54,000 pounds per year or an average of nearly 1200 bushels per outlet. Fruit and vegetable stands were second in importance averaging almost 51,000 pounds of apples (nearly 1,150 bushels) per store; followed by meat markets with 19,000 pounds; "independent grocers" with about 14,000 pounds; and delicatessens, fifth, with

about 8,000 pounds. The "chain grocers" included in this analysis averaged sales of 7,000 pounds of apples per store per year.

Receipts and Sales of Certain Fruits—On the basis of sales reported by 1,790 independent retailers, oranges led in tonnage of fruit sold amounting to about 30 per cent of the total while apples made up 26.6 per cent. Bananas accounted for more than a fifth of the carlot unloads but were less than 10 per cent of the total sales of the 7 fruits by these independent retailers. In a similar manner, western grapes made up 12.2 per cent of the unloads but less than 4 per cent of the sales by independent retailers. On the contrary, eastern pears were less than one-half of 1 per cent of the unloads but 1½ per cent of sales through independent stores.

Analysis of Sales of Independent Retail Outlets

Comparative Tonnages Sold Per Outlet—Sales of fruits other than apples show some interesting variations among retail outlets. For example, fruit and vegetable stands sold about 9,000 pounds more of oranges per store than of apples, but pushcart or wagon hucksters disposed of 31,000 pounds more of apples than of oranges. Delicatessens sold almost identical tonnages of apples, grapefruit and bananas, but twice that quantity of oranges. Fruit and vegetable stands and pushcart or wagon hucksters handled almost identical quantities of pears and peaches; but retail grocers, delicatessens, and meat markets handled relatively small volumes of such fruits. There seemed to be a tendency for the fruit and vegetable stands and the pushcart or wagon hucksters to handle relatively large proportions of the less standardized and more highly perishable fruits.

With regard to apples, pushcart or wagon hucksters sold more tonnage per outlet than any other type of independent retailer (about 54,000 pounds annually), although fruit and vegetable stands were a close second with about 51,000 pounds. Independent groceries sold less than 14,000 pounds of fresh apples per store per year. While appreciable quantities of apples were sold in the form of applesauce by these grocers and delicatessen operators, sales were about 85 per cent fresh apples.

Gross Dollar Sales and Tonnages Per Outlet—In 370 retail grocery stores, sales of apples rose as volume of all commodities increased, but not in direct proportion either to sales of all commodities or to sales of fruits and vegetables in general. The same situation was true with regard to other important fruits.

Sales by fruit and vegetable stands were confined almost entirely to fruits and vegetables. Almost 12 per cent of the 976 stands from which gross sales data were obtained had less than $5,000 gross sales per year; and 7 per cent reported sales of more than $50,000, averaging over $76,000 of fruits and vegetables per year. As in the case of the independent grocery stores, apple sales per stand followed an upward trend as total sales increased, but the apple trend was not directly proportionate to total sales. In the largest stores, oranges led in total volume sold per store, with about 210,000 pounds per year; apples were second, with about 143,000 pounds; grapefruit third, with 115,000 pounds; and bananas and pears were equal, with about 53,000 pounds each.

Family Income and Fresh Fruit Sales—Income seems to have been more of a factor in some types of retail outlets than in others. Among independent

retail grocery stores, sales of all fruits per store rose rapidly as incomes increased, and for each of the 7 leading fruits, sales per store were greatest in the highest income group. This data seem to indicate that independent grocery stores which handle fruits and vegetables do not sell them so readily in the low-income areas where competition with fruit and vegetable stands and pushcart or wagon hucksters, is keen, as in the higher-income areas, where these hucksters are relatively few in number.

Among the fruit and vegetable stands, the volume of apples handled in the next-to-the-lowest income group was greater than in the highest income group, and the same was true of pears, peaches, and grapes. Sales of oranges, bananas, and grapefruit, however, were greatest in the highest income group.

Spoilage Related to Fruit Sales—Care in growing, harvesting, packaging, packing, and handling, up to the time the retailer takes delivery, is essential to minimize spoilage. Retailers cannot improve the condition of the fruit after they get it. They can merely try to keep their own spoilage from being excessive as compared with other retailers by exercising care in selecting and handling the fruit, combined with a rapid turn-over.

Analysis of the available data seems to indicate that summer apples have a relatively high percentage of spoilage in the average retail outlet, being exceeded only by peaches, and equalled only by western grapes. These retailers reported an average spoilage of from 11 to 12 per cent on summer apples, and 8 per cent on winter apples. From a competitive point of view, this may be compared with 13 per cent on peaches, 11 per cent on western grapes, 9 per cent on grapefruit, 8 per cent on pears, 7 per cent on oranges, and 6 per cent on eastern grapes. Except for delicatessen stores, pushcart or wagon hucksters reported the smallest proportion of spoilage.

Sources of Supply for Apples—Almost all of the independent retailers reported that they purchased all of their apples from jobbers. About 6 per cent reported that they purchased eastern apples at farmers' markets, and 1 per cent bought them from peddlers who came to their retail stores. Only about 2 per cent of the retailers reported buying eastern apples at auction. The fruit and vegetable store operators made almost all of the non-jobber purchases. Their larger volume apparently encouraged and enabled them to buy from the same sources as small jobbers.

Purchases from jobbers averaged 90 per cent of the eastern apples and 86 per cent of the western apples. Purchases of western apples at auction averaged 14 per cent of the western apple tonnage.

Varieties Handled—Only 5 eastern apple varieties were named as having been handled by 20 per cent or more of the retailers. The frequency with which each variety was named is not an index of the volume handled. It is an index of how well the variety names are known and of their relative market standing. Many of the varieties were probably handled one or more times during the season by many retailers who did not name them. Over 40 varieties of eastern apples were named by one or more retailers, but the 5 most popular varieties were McIntosh, Greening, Baldwin, York and Northern Spy.

Only 3 out of 8 western apple varieties were reported as having been handled by 20 per cent or more of the retailers. The Delicious variety was named by 91 per cent, Winesap by 41 per cent, and Pippin by 21 per cent of the retailers. An additional 6 per cent, which represents the Newtown

variety, may be counted with the Pippin, since these 2 variety names are often used interchangeably. A total of 15 eastern varieties were named in connection with the western variety questions. This and other features of the answers indicate that many retailers are confused on apple varieties. As among eastern varieties, the less popular western varieties were probably handled by more retailers than named them.

Grades of Apples Handled—Of the independent retailers, all but 5 per cent handled eastern apples during the 1937-38 season, and these were asked to indicate the grades they handled. The grade terms used indicate that very few of them think in terms of official grades. The official grade term "U. S. No. 1" was used by 23 per cent of the retailers and the term "unclassified" by 1 per cent of the retailers. They used terms such as might be expected to appeal to housewives. The grade descriptions "Best," "First Quality," "First Grade," "Extra Fancy," and "Grade A" were used by 38 per cent of the retailers. Together they used 30 grade designations. Some of them may use unofficial terms because they think their choice of terms gives a more precise meaning than do the official names.

The official western apple grade names 'Extra fancy" and "Fancy" were used to describe western apples by a limited number of retailers. "Extra fancy" was used by 18 per cent, and "Fancy" by 10 per cent of the retailers. Judging from this, the retailers as a group paid little attention to grades marked on the packages. They used 26 names for western apple grades.

Analysis of Sales of Chain Retail Groceries

Apple Volume Handled—Data obtained from 5 chains indicate that they disposed of 345,501 bushels of all kinds of fresh apples during the 1937-38 season, of which about 75 percent were eastern apples and 25 percent western. Eastern apples were sold in considerably greater volume than western apples by all the chain systems.

Four out of five chain systems sold more apples during the 3 months of October, November, and December than during any other 3-month period. The other chain had largest apple sales during January, February and March.

Volume of Canned Fruits and Juices Handled—It seems logical to assume that canned fruits and juices were used by consumers as substitutes for fresh fruits. It is also probable that a large part of the canned goods sold was in addition to, not merely substituted for, fresh fruits.

The volume of canned juices handled by these five chain grocery systems rose markedly in comparison with that of canned fruits from 1935 to 1938. Juices made up 43 percent of the total fruit and juice sales during the 1935-36 season, 50 percent during the 1936-37 season, and 52 percent during the 1937-38 season.

Tomato juice ranked first in volume in each of the three seasons, with pineapple juice second, and grapefruit juice third. These three juices made up 85 percent of the volume during 1935-36, 91 percent in 1936-37, and 89 percent in 1937-38.

Data were obtained concerning 12 kinds of canned fruit, of which 4 were outstandingly important. Canned peaches ranked first in volume in each of the three seasons. Pineapples were second in 1935-36, pears in 1936-37, and applesauce in 1937-38. These four fruits (applesauce, peaches pears and pineapple) together made up approximately three-fourths of the canned fruit sales volume.

Analysis of Selected Stores—Per store averages for the 137 stores as a whole show that apples were sold in greatest volume during November (averaging approximately 11 bushels of eastern and 1 box of western apples per week). September, October and March were about equally good apple months for these stores, which averaged about 10 bushels or boxes per week. December and January sales averaged less than 5 bushels; May less than 2; August, 1; and July and June less than a half bushel per store.

Although apples sold in largest volume in November, they made up only 28 percent of the fruit tonnage, as compared with 34 percent in September, and 30 percent in October. Similar percentages for other months ranged from 1 to 17 percent.

Other fruits sold in largest volume during January and February, with more than 3,000 pounds per week. The August sales volume was lowest with only 907 pounds as compared with 3,603 pounds of fruit per week during January.

September, October, November, February, and March, were the most important apple months for these 137 stores. Almost 75 percent of their apple tonnage was sold during these months. Comparable percentages for 8 other important fruits sold during these 5 months are: oranges, 28; grapefruit, 68; bananas, 46; pears, 52; peaches, 20; grapes, 87; honeydew melons, 35; and cantaloupes, 9 percent.

It is difficult to determine the role which the appraisal of the individual store manager plays in determining the quantity and kind of fruit sold from week to week in each store. There can be little question that differences in sales per store are the result of such appraisals by the individual store manager concerning the possibilities for profitable disposal of fruit. His appraisal may be correct or incorrect but under any circumstances it determines upper limits to volume of sales for any given week. In the month of July only 27 percent of these 137 stores handled apples and weekly sales of apples averaged only 17 pounds per store for all stores. In September, 98 percent of the stores handled apples, and average weekly sales were 484 pounds per store. It is apparent that a large proportion of the store managers did not believe they could sell apples profitably during July, or else did not give consideration to handling apples.

Fall Fertilizer? Read the Ads.

THE COST OF REMOVING MATURE APPLE TREES, LEVELING GROUND, LIMING, FERTILIZING, RESEEDING AND REPLANTING

C. L. Burkholder and H. G. Hall
(From "Indiana Horticulture")

The oldest section of the apple orchard on the Purdue Farm at Bedford is 40 years old and many of the trees are in low vigor while others are so tall that thorough spraying of the top third of the tree is extremely difficult as well as expensive. In January, 1939, it was decided to remove nine acres of these trees, level, lime, fertilize and replant. The question immediately arose as to the probable cost and estimates varied widely. As the removal and replanting program called for the final elimination of over 40 acres of the aged trees in the planting, it was decided to keep a detailed cost account of all operations on the first area to be removed. These figures have been summarized and groupd under the headings in the cost table below and show first just the

expense per acre for tree removal and leveling. Seventy-five dollars was deducted for the 75 cords of wood, leaving a net cost per acre of $25.96.

The next group of cost items includes liming, commercial fertilizer, reseeding, 335 young trees and planting of these trees. Total cost of all operations and trees was $604.20 less $75.00 for wood, giving a net cost of $529.20 or $58.80 per acre. Hourly rates for tractors, teams and man hours are indicated at the bottom of the table.

It is of interest to note that the expense of actually pulling the trees ($20.80) was a very small part of the total expense. The entire 340 trees were pulled out in one day's time using a tractor driver and four helpers and a 10-ton Caterpillar tractor which was rented at $1.50 per hour. By far the largest single item of expense ($205.80) was the cost of trimming and sawing up the trees and pulling away and disposing of the tree crowns.

A casual study of these figures would indicate that it is quite costly to remove an old orchard and replant—amounting to approximately $1.55 per tree. However, the real question for every commercial orchard operator to consider is whether all areas and varieties in his orchard are paying back at least the cost of the care they receive. A study of production costs and sales returns in this orchard beginning in 1930 would indicate that during the period 1930-1938 inclusive, this area of 340 trees has gone "in the red" at the rate of about $1.25 per tree per year or that the rest of the orchard had to make up a deficit of $3,825.00—more than twice the original cost of the complete stationary spray plant in this orchard. When figured from this angle, the investment of $1.55 to pull out one of these old trees, level, fertilize, and replant a young tree becomes an entirely different picture. Do you have an area of worn out "loafers" in your orchard? If you have, isn't it about time to hold court and bring condemnation proceedings?

Summary of Detailed Cost Records on Removing Approximately Nine Acres of 40 year old Apple Orchard and Leveling, Liming, Fertilizing, Reseeding and Replanting. Purdue Farm, Bedford, Indiana—1939

Pulling 340 trees	$20.80	
Trimming and sawing up trees, burning brush, dragging out stumps	205.80	
Cording and hauling wood	15.20	
Filling stump holes	13.60	
Killefer disking and leveling ground	53.25	
	$380.65	
Less value 75 cords wood @ $1.00	75.00	$233.65
		25.96
24 tons limestone, hauling and spreading	$50.70	
2 tons commercial fertilizer and drilling	61.47	
Cost of 335 trees for replanting	113.93	
Replanting, digging holes, hauling in black dirt	59.95	
Reseeding, seed and application	9.50	
Total cost of all operations	$604.20	
Credit for 75 cords wood @ $1.00	75.00	
Final cost less income from wood		$529.20
		$58.80

"Johnny, I told you to count 50 before you did anything to your little brother. And now I find you holding him in the closet."

"Yes, Mother, I'm counting 50. But I want to be sure I know where he is when I get through."

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Feeding Fresh Apples to Livestock

After the copy for the October issue of Maryland Fruit Grower was set up, the following article was found in the October issue of Illinois Horticultural Society News Letter No. 7, as a reprint from "Virginia Fruit".

It offers another outlet for under-grade apples, and for drops, culls, cider pomace, etc. It is also a chance for the dairymen and livestock producers to save on the feed bill. Growers should contact these sources of sale for such fruit.

The article, written by Mr. Sam R. Hurst, Winchester, Virginia, follows:

"We have experimented with the feeding of fresh apples in several ways. We have started with small shoats on mixed ground feed and within a few days thereafter began giving them a small quantity of apples at each feeding, gradually increasing the quantity of apples and decreasing the ground feed until the shoats were completely taken off the ground feed and fed apples entirely, with plenty of fresh water available at all times. These shoats continued thrifty and grew rapidly and were in good condition.

We have also fed apples for several years to the hogs that we have butchered for our own use and for people on the place, and found the cured meat superior in flavor to that from hogs fed on feeds other than apples. In feeding these butchering hogs, we used from one-fourth to one-third only of the amount of other feeds, the balance being entirely apples.

We have also fed apples to dairy cows, cattle and horses. We find that all animals to which we have fed apples stay in excellent condition, and we consider apples a very beneficial feed in many ways. From the time Transparents start, which is usually about July 1 in this section, we begin feeding the cull apples to the cows, beginning with only a few apples morning and night placed in the feed trough with other feed.

We increase the quantity of apples daily and decrease the quantity of other feeds until the cows consume from three-fourths to one bushel each morning and night. By the time we have reached this quantity at a feeding, we have diminished the other dairy feed to about one-third the quantity that we find necessary when apples are not available. During the season when hay is fed, each cow will consume not more than one-third to one-half as much hay over the period when apples are being fed.

We find that the flow of milk increases with the feeding of apples, and the quality is superior both in milk and butter fat. When the supply of apples has been exhausted and we have to use other feeds entirely, we find the decrease in quantity of milk is very noticeable.

If there is any question you would like to ask further along this line we would be pleased to hear from you. In conclusion, will say that in our judgment we feel that if the apple growers generally would arrange to utilize their culls or low grade apples for feed on the farm, this would ultimately result in better prices for canners and other grades on up the line. If, as an industry, we could fully appreciate the benefits that could be obtained by preventing cull apples from getting to the markets, all interested in apples would be greatly benefited thereby.

In the last few days, some of our best customers, at distant points, have told us on the telephone that they were not inclined to buy better grades of packed apples, and as a result were moving practically no apples, due to the fact that trucks were peddling to the retailers all through their markets cull apples in bulk, greatly reducing the total movement and consumption of apples in these territories.

In our opinion, in a normal season, there are not enough possible markets to consume the entire crop of apples in this country, including the culls. So if the growing of apples is to be profitable, we feel that we must find some way to utilize the culls to take them right out of competition with our better grades of fresh fruit. It is a problem of tremendous importance but, no doubt, with united effort it can be worked out."

How to Select Fruit for Exhibit

Select the best fruit that you have. Handle it carefully. Pick out plenty of fruit from which to make final selection. Try to get fruit of the best color for the variety. Be careful not to break or pull out the stems; they are a part of the fruit. Place fruit in cold storage, if possible, to keep it firm. At least, place it in a cool cellar where there is ventilation, and enough moisture to prevent drying and shrivelling of fruit. If it is to be shipped to the fruit show, pack each fruit very carefully, in paper, to avoid bruising.

In general, fruit is judged on the basis of form, size, color, uniformity, and blemishes.

Form - Should be typical form or shape of the variety.

Size - The general run of size for the variety, or what is usually a good commercial size - not too small or too large.

Color - The usual commercial preference. If a red apple, try to get the highest color. If a green or russet apple, stick to a type of green or russett. For example, if green Grimes is selected, have all of the apples of that color or shade of green, and if a yellow Grimes is selected, have all apples of that shade of yellow. If one apple has a blushed cheek, make them all of about that type.

Uniformity - Premium awards are given for the skill of selection of the very best fruit that is grown by the exhibitor. This is where showmanship comes in. All apples should be uniform in form, size and color. They should look alike, as far as possible; the same in height, width and general shape. One off-type York can upset a whole plate of otherwise fine York apples.

The fruit should be in good, firm condition. It is not necessary to polish the fruit, but it may add to appearance. Generally, the judge makes no distinction unless the unpolished fruit is really too rough to take a polish. Freedom from blemish means clean fruit that has no stings, worm holes, spots, broken or missing stems or stem cuts, etc.

Remember that the judge is going to look down inside the box or basket. Make all of the fruit just as good as that on top.

The judge is only a human being. You may not agree with him, but he has his reason for placing the exhibits in the premium class. Be a good sport. Put up the best that you have, and keep in mind that maybe somebody else may have something a little bit better in quality or selection.

The general score card that the judge has in mind is:

Form	- 15 points
Size	- 15 "
Color	- 20 "
Uniformity	- 20 "
Freedom from blemish	- 30 "
Total	- 100 "

PREMIUM LIST

MARYLAND APPLE SHOW, LORD BALTIMORE HOTEL, BALTIMORE

JANUARY 9, 10, 11, 1940

(Exhibits are set up on the Mezzanine Floor overlooking Main Lobby)

Only one entry per variety class is allowed one individual. For example, a grower may enter one plate, diamond, box or bushel of the same variety, but he may not enter more than one plate, diamond, box or bushel of the same variety. However, he may enter any number of the specified varieties in any of the classes. Thus, he may enter any number of plates, all of different variety, and the same with bushel, box or diamond.

Varieties - York, Stayman, Grimes, Winesap, Golden Delicious, Rome, Delicious, Jonathan and Paragon or Black Twig. The red bud sports will be grouped and judged as one variety per class, and the odd varieties not listed above, will be placed in one group and judged as one variety per class. Any bud sports or odd varieties may be entered in all of the following classes, - plate, diamond, box or bushel.

Class I - PLATES (5 apples per plate). First place, $3.00. Second place, $2.00, Third place, $1.00.

Class II - DIAMONDS, -(16 apples per diamond). First place, $4.00. Second place, $2.50. Third place, $1.00.

Class III- BUSHEL BASKETS - (standard bushel basket) . First place, $4.00. Second place, $2.50. Third place, $1.00.

Class IV - EASTERN OR WESTERN BOX - (either 1, 1-1/8, or 1-1/5 bushel capacity. Fruit wrapped or unwrapped. First place, $4.00. Second place, $2.50. Third place, $1.00.

Class V - FANCY BASKETS - (12 to 15 apples of any of the following varieties: Delicious, Jonathan, Stayman, Golden Delicious. Varieties may be mixed in the basket, if desired.) First place, $6.00. Second place, $4.00. Third place- $2.00.

SWEEPSTAKES-Exhibitor scoring largest number of points, on following basis. Each first place, 5 points; each second place, 3 points, each third place, 1 point. One award - $5.00

BEST PLATE OF APPLES- IN SHOW One award - $5.00.

In other words, all red bud sports will be judged together, and only one first, second and third place will be awarded. All odd varieties will be judged together and only one first, second, and third place will be awarded.

A.F.Vierheller,
Extension Horticulturist,
University of Maryland.

Feeding Fresh Apples to Livestock

After the copy for the October issue of Maryland Fruit Grower was set up, the following article was found in the October issue of Illinois Horticultural Society News Letter No. 7, as a reprint from "Virginia Fruit".

It offers another outlet for under-grade apples, and for drops, culls, cider pomace, etc. It is also a chance for the dairymen and livestock producers to save on the feed bill. Growers should contact these sources of sale for such fruit.

The article, written by Mr. Sam R. Hurst, Winchester, Virginia, follows:

"We have experimented with the feeding of fresh apples in several ways. We have started with small shoats on mixed ground feed and within a few days thereafter began giving them a small quantity of apples at each feeding, gradually increasing the quantity of apples and decreasing the ground feed until the shoats were completely taken off the ground feed and fed apples entirely, with plenty of fresh water available at all times. These shoats continued thrifty and grew rapidly and were in good condition.

We have also fed apples for several years to the hogs that we have butchered for our own use and for people on the place, and found the cured meat superior in flavor to that from hogs fed on feeds other than apples. In feeding these butchering hogs, we used from one-fourth to one-third only of the amount of other feeds, the balance being entirely apples.

We have also fed apples to dairy cows, cattle and horses. We find that all animals to which we have fed apples stay in excellent condition, and we consider apples a very beneficial feed in many ways. From the time Transparents start, which is usually about July 1 in this section, we begin feeding the cull apples to the cows, beginning with only a few apples morning and night placed in the feed trough with other feed.

We increase the quantity of apples daily and decrease the quantity of other feeds until the cows consume from three-fourths to one bushel each morning and night. By the time we have reached this quantity at a feeding, we have diminished the other dairy feed to about one-third the quantity that we find necessary when apples are not available. During the season when hay is fed, each cow will consume not more than one-third to one-half as much hay over the period when apples are being fed.

We find that the flow of milk increases with the feeding of apples, and the quality is superior both in milk and butter fat. When the supply of apples has been exhausted and we have to use other feeds entirely, we find the decrease in quantity of milk is very noticeable.

If there is any question you would like to ask further along this line we would be pleased to hear from you. In conclusion, will say that in our judgment we feel that if the apple growers generally would arrange to utilize their culls or low grade apples for feed on the farm, this would ultimately result in better prices for canners and other grades on up the line. If, as an industry, we could fully appreciate the benefits that could be obtained by preventing cull apples from getting to the markets, all interested in apples would be greatly benefited thereby.

In the last few days, some of our best customers, at distant points, have told us on the telephone that they were not inclined to buy better grades of packed apples, and as a result were moving practically no apples, due to the fact that trucks were peddling to the retailers all through their markets cull apples in bulk, greatly reducing the total movement and consumption of apples in these territories.

In our opinion, in a normal season, there are not enough possible markets to consume the entire crop of apples in this country, including the culls. So if the growing of apples is to be profitable, we feel that we must find some way to utilize the culls to take them right out of competition with our better grades of fresh fruit. It is a problem of tremendous importance but, no doubt, with united effort it can be worked out."